



### A PRESSING EDUCATIONAL NEED

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No state can, I presume, hope to be economically independent, although an empire in extent. Whether all elements needed for its economic life are found within its own confines is a matter of chance. This, however, is not the case with education. Whether or not a commonwealth meets all the educational needs of its people depends very largely upon the vigor, the foresight, and the enlightenment of its citizens. This should be self-evident and must hold for all save small or young states and for every educational need except perhaps certain very special aspects of education, science, and art.

Our democratic commonwealths early recognized their responsibility in regard to primary and secondary education, soon afterward in respect to higher education and later also to the professions of teaching and law. More recently still the advancement of learning received special attention and support, but strangely enough our public and our commonwealths have been slow to recognize the fact that nothing is more intimately related to public welfare, and nothing likely to promote the common good more than the furtherance of public health through the development of the medical sciences.

Even primitive man, of necessity, must have come to realize that health and happiness are intimately related. Among civilized peoples happiness depends upon very complex relationships and hence rarely is realized without good health. And next to honor, life itself, love of one's own and love

of truth, what could one value more deeply than health. Moreover, public health and public happiness are related even more intimately than personal health and personal happiness, for in public no man can live unto himself alone. A hermit may achieve personal happiness, but in community life no one is wholly unaffected by the acts and the physical condition of his neighbors. In view of this fact, the tardy recognition of *public* responsibility not only for public health, but also of its intimate dependence on personal health, seems surprising indeed.

It is now two generations since modern bacteriology began to reveal to us how diseases are conveyed from person to person. Previously, even contagious disease was regarded largely or wholly as a purely individual matter. Unfortunately there are some benighted individuals among us still who wish to regard it as such and continue to act as though there were no relation between public health and personal well-being. It is fortunate, however, that these individuals have been able to determine public policies regarding health only in certain small communities. In large communities such a decision would be calamitous indeed.

It was wise that our forefathers decided to leave religious education to private initiative, but it was unfortunate that the education of physicians and the care of the public health also rested there until very recently. The first complete medical course under State auspices, it seems, was offered by the University of Vermont in 1822. Virginia followed in 1827; Missouri in 1845, and Michigan

in 1850. But even at present only twenty-nine of our forty-eight States maintain medical schools under State auspices.

Some of our State schools supplanted private schools which had fallen behind the vanguard of progress or which needed assistance, others supplemented them. Of the remaining nineteen States which have no state-supported medical schools, many are so fortunate as to have strongly endowed private schools within their borders. This is true, for example, of the States of Maryland, Massachusetts, New York, and Pennsylvania. Others, such as Illinois, Missouri and Ohio, have both private and endowed schools. A few have no medical schools whatever, either because they are small or not sufficiently populous, or because they lie near large medical centers. Delaware, Nevada, and Rhode Island are examples. A few States which probably are able to do so have failed to assume their full responsibility as yet.

Our own State established a school of medicine as an integral part of its university in 1902. The population of California was about one and a half million at that time and its aggregate wealth approximated one and a half billion. At present the population of California is approximately three and a half million and its aggregate wealth four and a half billion dollars.

We have undertaken many large and important projects for the public good, but it may, I think, be justly said that we have not accepted our full responsibilities for medical education and public health. No one who realizes just what this implies can look complacently upon the present situation. No progressive citizen will decry the expenditure of millions for good roads, but what a contrast to these large sums is formed by the relatively small amount spent upon the education of our future physicians and guardians of public health, and upon the advancement of the medical sciences, upon which the success of both rests. If not the dignity, then surely the welfare of a commonwealth of three and a half million people, would seem to justify a more generous support. Good health concerns every citizen even more than good roads. A well man may muddle through. A sick man can't do even that and good roads do not profit a dead man.

I do not mention these things implying that the need for medical education primarily rests upon an economic or statistical basis. Aside from certain special aspects of disease the population of every State is large enough to present all the major problems of public health and hygiene and of medicine. The need for medical care varies directly with the size of a man's family and indirectly with his wealth.

Although there is no immediate exigency that must be met, the time is past when the Pacific Coast can continue to look so largely to the East for physicians and for the advancement of the medical sciences. Surely, this is not a re-echo of provincialism. A community of four million people should want to assume the burden that rightly is theirs and answer one of the primary needs of its people. This is the only self-respect-

ing and the only wise course, and surely nothing else is sound public policy.

With a population of five and a half million people, the Pacific Coast States have a total of 9677 registered physicians. This is one physician for every 575 inhabitants, a ratio somewhat in excess of that in the United States at large where it is one to every 656 inhabitants. But it must not be forgotten that the population of this coast is scattered very widely indeed, and that among the licensed physicians here there are a larger number who reside in this region largely, or wholly, for purposes other than medical practice.

The general mortality rate among physicians between the ages of twenty-five and sixty-five is estimated as sixteen per one thousand. Hence, the annual loss from death among physicians upon this Coast is 155. It, no doubt, is larger than this because of the composition of the medical profession here. Besides, to this number must be added the physicians required to answer the needs of growth in population. This is the greater demand, especially in these States, and it exceeds the loss from death at present. On the basis of the recent increase in population, about five hundred physicians would be required annually, in addition to those lost by death, in order to maintain the present ratio upon this Coast. Hence, the annual need of the Pacific States would seem to be approximately 655 physicians. Yet the one private and the two State medical schools within this area graduated only 104 students in 1920. This leaves an annual deficit of over 550, which must be met by physicians from other States. It is true that to a very small degree the above discrepancy is offset by young people from the Pacific States, who are being educated in medicine outside of this area, but this number necessarily is small and really quite negligible in connection with the total requirements of this Coast.

But it may be asked why should we assume a burden which other States now are carrying for us. Apart from considerations already presented, there is no reason. Any commonwealth may be as dependent as it chooses to be and we well might rest content, provided that we receive only well-trained physicians and that we can rely on getting the needed number in the future. As far as the first consideration is concerned, it may be frankly stated that most of the schools of medicine upon this Coast now afford better training than that given in many of the medical schools outside of this area. Moreover, it is well to remember that there is no reason why our schools should not move still nearer to the front in medical education if more liberally supported.

A short survey will help to answer the question whether, under present conditions, we can continue to receive an adequate supply of physicians from other States. The annual loss from death among physicians in the United States is estimated at 2329. Upon the basis of the annual increase in population during the last decade, 2286 more physicians are needed annually in order to supply the need of additions to the population. This makes a total of 4615. The grand total of

graduates in medicine in the United States was only 3047 in 1920, although it was 4440 in 1910. Hence, it is clear that unless other States and other agencies assume still larger responsibilities for medical education, that this Coast soon will be compelled to assume its own obligations. And surely no resolute people will take a chance with public health by shirking its duties toward medical education or deliberately decide to be permanently dependent upon the initiative and generosity of other States.

But it may be urged that we still have one physician for every 506 inhabitants in our own State. This is an excess of more than 20 per cent over that for the country at large. However, from 3 to 5 per cent of the physicians licensed in California really are not in active practice, and the alleged therapeutic fame of our climate brings us a large number of chronic invalids who considerably increase the demand for medical care. To a certain extent, I presume, the alleged lower general morbidity of the native population may counterbalance this effect, but there is no way in which this matter can be determined. The estimate which one obtains regarding it depends very largely upon the enthusiasm of the particular Californian consulted.

The estimated annual loss from death from California physicians is 108, but the increasing population alone requires 385 additional physicians yearly to maintain the present ratio. The number of graduates in the schools within the State, which maintain standards justifying recognition by the State Board of Medical Examiners, was only ninety in 1920. Hence, it is clear that, at present, California depends upon the generosity of private endowments or State efforts beyond her borders, to the extent of 403 physicians annually. However justifiable it may be at present, everyone will, I think, admit that for a permanent status this is no more desirable than it is creditable, to a large and prosperous commonwealth. The idea is not that we should have only physicians trained locally in medical practice within the State, but that our State must as soon as possible do its share in the training of physicians, as well as in the advancement of the medical sciences and assume its rightful educational burden.

Upon the basis of our present population, we should carry one-twenty-fifth of that national burden. We are carrying far less than this—less than one-fourth of this. Hence, it is fortunate that private agencies have considerably supplemented State effort in the past. This was done in part by institutions now defunct, and since 1909 also by Stanford University. Indeed, no matter how one regards it, the medical needs of the State of California, insofar as they were met intramurally, were to a considerable extent met, since 1909, by Stanford. In fact, from this date up to 1921 the graduates of Stanford, though not many, formed the majority of the combined graduates in medicine at California and Stanford. Stanford's share was over 55 per cent.

Were the University of California Medical School alone to meet the annual demand for physi-

cians in the entire State, it should graduate approximately four hundred physicians annually and have 1600 medical students. That number of graduates is approximately twenty times those graduated in 1920. Moreover, since our best endowed medical schools, such as Harvard and Johns Hopkins, graduate only about one hundred students each annually, and wisely limit their classes approximately to this number, the inability and perhaps also the inadvisability, of a single school meeting this needs seems clearly evident. Only one medical school in the United States graduates more than 170 students annually. Hence, even if our State could at once accept its full responsibility for medical education, and enlarged the facilities of our State medical school three or four times, there still would be ample room for another institution solely because of the constant need for physicians.

But there are other weighty reasons why a second institution, wholly independent of legislative aid, can be a distinct advantage. Anyone who even briefly surveys the history of education in the United States and examines the status of State schools cannot fail to be impressed by this fact. Although the State of Maryland is small, and although it is located in a portion of our country well provided with medical schools, it has recently been both declared and acknowledged by high authorities that it is best that two medical schools be maintained in the city of Baltimore. Certainly, if this be true for Maryland it must also be true for California. Here is an empire in extent with a much larger population and with more than comparable resources even today. But far more important still than these considerations is the undeniable fact that the educational and physical needs of the people of California are practically the same as those of the rest of the people of our entire country. If endowed medical schools have done much elsewhere in stimulating and arousing personal initiative and also in stimulating State schools besides contributing actively to medical progress, they also can do so here in California.

It is to be hoped that our people will generously support the medical school of our State University. Not to do so would be to jeopardize public health and seriously hamper medical progress. But it should not be forgotten that, so far as possible, Stanford makes California's peculiar problems her own and that she will always be ready to do whatever she may to further the best interests of our State and to help extend the many-sided activities of our great State University.

Stanford is proud of the fine accomplishments and of the splendid future which we know our State medical school could achieve alone. But there is some advantage in friendly rivalry and whole-hearted co-operation between a State and an endowed institution—between private and public initiative. We are all the more likely to realize high ideals under the stimulus of kindly suggestion and friendly criticism. The development through generous financial support, of both medical schools as well as of both Universities, is likely to be best

not only for the sake of medical education and of public health, but also for the State and Nation.

The task is more than enough for both institutions. Nor must it be overlooked that the position of our Pacific institutions is strategic and that the welfare of the entire country is best promoted by a general and equal development throughout its broad domain. Let us hope that philanthropic persons both within and without the State will gladly acknowledge that from the beginning Stanford has assisted very materially in carrying a large public burden, and that with the growth of population she must of necessity carry more. Such a role will not in the least restrict the activities of our State University. It is bound to promote rather than hinder its progress.

(Stanford University, January 26, 1923).

### CONGENITAL ELEVATION OF THE SCAPULAE \*

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Congenital elevation of the scapulae is a rare deformity, as evidenced by the fact that there are but five cases reported in all six numbers of the quarterly index of medical literature. There has been but one case in the last few years in the Stanford out-patient department. Both the Stanford case and the one here reported showed somewhat similar conditions.

There are two types of elevated scapulae—one in which the scapula is pulled up apparently by muscular action only, and a second type in which there is a definite bony deformity that apparently changes the leverage of the muscles in such a way that the scapula is pulled upward. It is of this latter type that I wish particularly to speak.

In this form there is a bony bar that runs from the upper portion of the scapula to the posterior portion of the lower cervical vertebrae. A definite joint is formed at either end of this bar. This was the condition present in both cases referred to above. In endeavoring to find why such a bar is present, most naturally one looks back into the phylogenetic ancestry of the race. The only thing that seems at all likely to be the phylogenetic ancestor of this accessory piece of bone is a cartilaginous bar, which occupies a somewhat similar position in a special group of fishes; namely, the dipnoi.

In May, 1921, a boy, E. R., age two years, was brought to see me with the complaint of deformity of the left shoulder. The child had been a full-term child; had three older brothers and sisters well developed; no abnormalities in family; birth was normal; no instruments used; had a perfectly normal babyhood up to one year. There is a history of a fall at the age of one year. About

three months ago—that is, when the child was one year and nine months old—the parents began to notice that there was inequality in the shoulders.

On examination, the left scapula was definitely higher than the right and somewhat smaller than the right. The neck muscles on the left side seemed to be bunched. Motion in the scapulo-humero joint was not quite so free on the left side as on the right side. X-ray examination showed congenital elevation of the left scapula. The upper end of the shaft of the left humerus was expanded and showed an area of decreased density. This was somewhat irregular about the margins. This suggested a bone cyst with fracture into it, with callus formation. Lying behind the lateral mass of the fifth cervical vertebra on the left side, there was a smoothly outlined bone suggesting a cervical rib.

A few days later operation was undertaken, the operation consisting of two parts—first, removal of the accessory bar of bone; and second, a plastic on the muscles of the back below the scapula in order to hold it down. An incision was made over the bar which could easily be felt running from the upper inner angle of the scapula to the upper thoracic vertebrae. This bar was divided and most of it excised; the stump at either end being left to avoid too much mutilation, was covered in with soft tissue so as to prevent the regeneration of the bar. This wound was closed. A second incision was then made vertically between the spinus processes and the posterior border of the scapula. A V-shaped piece was then taken out of the trapezius in such a way that the base was at the border of the trapezius and the apex at about the fifth or sixth thoracic spine. A suture was then taken from the inferior angle of the scapula, taking in as much tissue as possible about the angle of the scapula, and carried down through the muscles and brought out through the skin at the region of the eleventh or twelfth thoracic spine. The needle was then reinserted at this point, and brought out again through the muscles at the angle of the scapula. This was a heavy suture and capable of withstanding a great deal of tension. It was tightened and the scapula thus brought downward and fixed in place. The V-shaped rent in the trapezius was then sutured as an additional measure to hold the scapula down. The scapula came down so readily that it was not necessary to do anything to the elevators of the scapula. The wound was then closed and the child's arm and thorax encased in plaster, in order to hold him quiet. He made an uneventful recovery and went back to his home in Mendocino County after about three weeks.

I have not seen the child since, but have heard from the parents that they are well satisfied with the result, and that the two shoulders are now very nearly alike.

Both parts of this operation have been done before, but, as far as I know, this is the first time that a complete operation has been done on one of these cases.

\* Read before the Fifty-first Meeting of the California State Medical Society.